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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,131	10/14/2003	Steven Dennis Halford	680-067US	4488

22897 7590 08/15/2006

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EXAMINER	
MILORD, MARCEAU	
ART UNIT	**PAPER NUMBER**
2618	

DATE MAILED: 08/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/685,131	HALFORD ET AL.	
	Examiner	Art Unit	
	Marceau Milord	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1- 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward et al (US Patent No 6167286) in view of Harris (US Patent No 7089037 B2).

Regarding claims 1 and 5, Ward et al discloses a method (figs. 9-11) comprising: receiving through an antenna system (900 of fig. 9) a first portion of a beacon frame signal via a first signal path and a second portion of said beacon frame signal via a second signal path (col. 3, lines 57-65; col. 4, lines 34-67; col. 5, lines 35-65); measuring the signal quality of said first portion of said beacon frame signal and of said second portion of said beacon frame signal (col. 9, lines 1-23); and selecting between said first signal path and said second signal path for receiving a subsequent signal (col. 13, lines 10-49; col. 9, lines 37-59; col. 10, lines 20-65; col. 11, lines 8-57; col. 12, lines 8-29).

However, Ward et al does not specifically disclose that the selection is based on the signal quality of a first portion and a second portion of said beacon frame signal.

On the other hand, Harris, from the same field of endeavor, discloses a system and method for maximizing throughput in a telecommunications system is disclosed. The system includes an antenna system using fixed narrow beams that transmits and allows improved capacity gain to be realized without degrading call performance. The system can include: forming a plurality of directional narrow uplink beams at a main antenna; receiving communications signals on the plurality of directional uplink beams; periodically scanning across the plurality of uplink beams associated with a given call; assessing a set of beams from the plurality of uplink beams based upon a quality of reverse link information; selecting a first subset from the set of beams to be turned off when the quality of reverse link information reaches a first predetermined value; and instructing the subset to not transmit a traffic channel and to continue to transmit the power control sub channel (col. 2, lines 29-56). Furthermore, The beam selection algorithm assesses the degree of certainty of its decision based on the quality of the reverse link information. The algorithm uses instantaneous and filtered historical reverse link channel estimation measurements. The algorithm also compares against set thresholds. A forward link-loading estimate may optionally be factored into the decision. If the beam selection algorithm decisions are considered certain, maximum capacity gain can be sought with low risk of degrading call performance. Beams to be turned off will not transmit a traffic channel or power control sub-channel. If the beam selection algorithm decisions are uncertain, call performance can be maintained (col. 3, lines 1-38). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Harris to

the communication system of Ward in order to improve capacity gain while maintaining call performance in a wireless communications system.

Regarding claim 2, Ward et al as modified discloses a method (figs. 9-11) wherein said antenna system is the steerable beam type and wherein said first signal path and said second signal path are along directionally distinct beams (col. 9, lines 1-36).

Regarding claim 3, Ward et al as modified discloses a method (figs. 9-11) wherein said antenna system is the diversity switching type and wherein said first signal path and said second signal path are associated with distinct antennas (col. 10, lines 20-58; col. 11, lines 14-40).

Regarding claim 4, Ward et al as modified discloses a method (figs. 9-11) wherein said selecting comprises: choosing said first signal path when the signal quality of said first portion is better than the signal quality of said second portion; and choosing said second signal path when the signal quality of said second portion is better than the signal quality of said first portion (col. 11, lines 1-50; col. 13, lines 10-49).

Regarding claim 6, Ward et al as modified discloses a method (figs. 9-11) wherein said beacon frame signal is a transmission of a beacon frame by an access point that operates in accordance with an IEEE 802.11 specification (col. 3, lines 1-32; col. 5, line 61- col. 6, line 24; col. 9, lines 1-36).

Regarding claim 7, Ward et al as modified discloses a method (figs. 9-11) wherein said beacon frame comprises a field for enhancing signal quality estimation (col. 9, lines 2-34;col. 10, lines 20-47).

Regarding claim 8, Ward et al as modified discloses a method (figs. 9-11) wherein said first portion of said beacon frame signal conveys a first portion of said field and said second portion of said beacon frame signal conveys a second portion of said field (col. 14, lines 10-44).

Regarding claim 9, Ward et al discloses a method (figs. 9-11) comprising: receiving through an antenna system (900 of fig. 9) a first portion of a field that constitutes a beacon frame via a first signal path and a second portion of said field via a second signal path (col. 3, lines 57-65; col. 4, lines 34-67; col. 5, lines 35-65); measuring the signal quality of said first portion as received via said first signal path and of said second portion as received via said second signal path (col. 9,lines 1-23); and selecting one of said first signal path and said second signal path for receiving a subsequent signal (col. 13, lines 10-49; col. 9, lines 37-59; col. 10, lines 20-65; col. 11, lines 8-57; col. 12, lines 8-29).

However, Ward et al does not specifically disclose that the selection is based on the signal quality of a first portion and a second portion of said beacon frame signal.

On the other hand, Harris, from the same field of endeavor, discloses a system and method for maximizing throughput in a telecommunications system is disclosed. The system includes an antenna system using fixed narrow beams that transmits and allows improved capacity gain to be realized without degrading call performance. The system can include: forming a plurality of directional narrow uplink beams at a main antenna; receiving communications signals on the plurality of directional uplink beams; periodically scanning across the plurality of uplink beams associated with a given call; assessing a set of beams from the plurality of uplink beams based upon a quality of reverse link information; selecting a first subset from the set of beams to be turned off when the quality of reverse link information

reaches a first predetermined value; and instructing the subset to not transmit a traffic channel and to continue to transmit the power control sub channel (col. 2, lines 29-56). Furthermore, The beam selection algorithm assesses the degree of certainty of its decision based on the quality of the reverse link information. The algorithm uses instantaneous and filtered historical reverse link channel estimation measurements. The algorithm also compares against set thresholds. A forward link-loading estimate may optionally be factored into the decision. If the beam selection algorithm decisions are considered certain, maximum capacity gain can be sought with low risk of degrading call performance. Beams to be turned off will not transmit a traffic channel or power control sub-channel. If the beam selection algorithm decisions are uncertain, call performance can be maintained (col. 3, lines 1-38). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Harris to the communication system of Ward in order to improve capacity gain while maintaining call performance in a wireless communications system.

Regarding claim 10, Ward et al as modified discloses a method (figs. 9-11) wherein said antenna system is the steerable beam type and said first signal path and said second signal path are along directionally distinct beams (col. 14, lines 10-44).

Regarding claim 11, Ward et al as modified discloses a method (figs. 9-11) wherein said antenna system is the diversity switching type and said first signal path and said second signal path are associated with distinct antennas (col. 10, lines 20-58; col. 11, lines 14-40).

Regarding claim 12, Ward et al as modified discloses a method (figs. 9-11) wherein said selecting comprises: choosing said first signal path when the signal quality of said first portion of said field is better than said signal quality of said second portion of said field; and choosing said

second signal path when the signal quality of said second portion of said field is better than said signal quality of said first portion of said field (col. 11, lines 1-50; col. 13, lines 10-49).

Regarding claim 13, Ward et al as modified discloses a method (figs. 9-11) wherein said local area network is in accordance with an IEEE 802.11 specification (col. 3, lines 1-32; col. 5, line 61- col. 6, line 24; col. 9, lines 1-36).

Regarding claim 14, Ward et al discloses a method (figs. 9-11) comprising: receiving through an antenna system (900 of fig. 9) a first signal via a first signal path on a shared-communications channel (col. 3, lines 57-65; col. 4, lines 34-67; col. 5, lines 35-65); measuring the signal quality of said first signal; receiving a portion of a beacon frame signal via a second signal path in said shared-communications channel after said receiving of said first signal (col. 9,lines 1-23); measuring the signal quality of said portion of said beacon frame signal; and selecting between said first signal path and said second signal path for receiving a subsequent signal (col. 13, lines 10-49; col. 9, lines 37-59; col. 10,lines 20-65; col. 11, lines 8-57; col. 12, lines 8-29).

However, Ward et al does not specifically disclose that the selection is based on the signal quality of a first portion and a second portion of said beacon frame signal.

On the other hand, Harris, from the same field of endeavor, discloses a system and method for maximizing throughput in a telecommunications system is disclosed. The system includes an antenna system using fixed narrow beams that transmits and allows improved capacity gain to be realized without degrading call performance. The system can include: forming a plurality of directional narrow uplink beams at a main antenna; receiving communications signals on the plurality of directional uplink beams; periodically scanning

across the plurality of uplink beams associated with a given call; assessing a set of beams from the plurality of uplink beams based upon a quality of reverse link information; selecting a first subset from the set of beams to be turned off when the quality of reverse link information reaches a first predetermined value; and instructing the subset to not transmit a traffic channel and to continue to transmit the power control sub channel (col. 2, lines 29-56). Furthermore, The beam selection algorithm assesses the degree of certainty of its decision based on the quality of the reverse link information. The algorithm uses instantaneous and filtered historical reverse link channel estimation measurements. The algorithm also compares against set thresholds. A forward link-loading estimate may optionally be factored into the decision. If the beam selection algorithm decisions are considered certain, maximum capacity gain can be sought with low risk of degrading call performance. Beams to be turned off will not transmit a traffic channel or power control sub-channel. If the beam selection algorithm decisions are uncertain, call performance can be maintained (col. 3, lines 1-38). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Harris to the communication system of Ward in order to improve capacity gain while maintaining call performance in a wireless communications system.

Regarding claim 15, Ward et al as modified discloses a method (figs. 9-11) wherein said selecting comprises: choosing said first signal path when the signal quality of said first signal is better than the signal quality of said beacon frame signal; and choosing said second signal path when the signal quality of said beacon frame signal is better than the signal quality of said first signal (col. 11, lines 1-50; col. 13, lines 10-49).

Regarding claim 16, Ward et al as modified discloses a method (figs. 9-11) wherein said antenna system is the steerable beam type and wherein said first signal path and said second signal path are along directionally distinct beams (col. 9, lines 1-36).

Regarding claim 17, Ward et al as modified discloses a method (figs. 9-11) wherein said antenna system is the diversity switching type and wherein said first signal path and said second signal path are associated with distinct antennas (col. 10, lines 20-58; col. 11, lines 14-40).

Regarding claim 18, Ward et al as modified discloses a method (figs. 9-11) wherein said shared-communications channel constitutes a local area network that operates in accordance with an IEEE 802.11 specification (col. 3, lines 1-32; col. 5, line 61- col. 6, line 24; col. 9, lines 1-36).

Regarding claim 19, Ward et al as modified discloses a method (figs. 9-11) wherein said first signal is a beacon frame transmission by an access point (col. 9, lines 16-54).

Regarding claim 20, Ward et al as modified discloses a method (figs. 9-11) wherein said beacon frame comprises a field for enhancing signal quality estimation (col. 9, lines 2-34;col. 10, lines 20-47).

Regarding claim 21, Ward et al discloses an apparatus (figs. 9-11) comprising: an antenna system (900 of fig. 9) for switching between a first signal path and a second signal path; a receiver for receiving a first portion of a beacon frame signal via said first signal path and a second portion of said beacon frame signal via said second signal path (col. 3, lines 57-65; col. 4, lines 34-67; col. 5, lines 35-65); and a processor for: measuring the signal quality of said first portion and said second portion of said beacon frame signal (col. 9,lines 1-23); and selecting between said first signal path and said second signal path for doing one of receiving and

transmitting a subsequent signal (col. 13, lines 10-49; col. 9, lines 37-59; col. 10,lines 20-65; col. 11, lines 8-57; col. 12, lines 8-29).

However, Ward et al does not specifically disclose that the selection is based on the signal quality of a first portion and a second portion of said beacon frame signal.

On the other hand, Harris, from the same field of endeavor, discloses a system and method for maximizing throughput in a telecommunications system is disclosed. The system includes an antenna system using fixed narrow beams that transmits and allows improved capacity gain to be realized without degrading call performance. The system can include: forming a plurality of directional narrow uplink beams at a main antenna; receiving communications signals on the plurality of directional uplink beams; periodically scanning across the plurality of uplink beams associated with a given call; assessing a set of beams from the plurality of uplink beams based upon a quality of reverse link information; selecting a first subset from the set of beams to be turned off when the quality of reverse link information reaches a first predetermined value; and instructing the subset to not transmit a traffic channel and to continue to transmit the power control sub channel (col. 2, lines 29-56). Furthermore, The beam selection algorithm assesses the degree of certainty of its decision based on the quality of the reverse link information. The algorithm uses instantaneous and filtered historical reverse link channel estimation measurements. The algorithm also compares against set thresholds. A forward link-loading estimate may optionally be factored into the decision. If the beam selection algorithm decisions are considered certain, maximum capacity gain can be sought with low risk of degrading call performance. Beams to be turned off will not transmit a traffic channel or power control sub-channel. If the beam selection algorithm decisions are uncertain, call

performance can be maintained (col. 3, lines 1-38). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Harris to the communication system of Ward in order to improve capacity gain while maintaining call performance in a wireless communications system.

Regarding claim 22, Ward et al as modified discloses an apparatus (figs. 9-11) wherein said antenna system is the steerable beam type and wherein said first signal path and said second signal path are along directionally distinct beams (col. 14, lines 10-44).

Regarding claim 23, Ward et al as modified discloses an apparatus (figs. 9-11) wherein said antenna system is the diversity switching type and wherein said first signal path and said second signal path are associated with distinct antennas (col. 10, lines 20-58; col. 11, lines 14-40).

Regarding claim 24, Ward et al as modified discloses an apparatus (figs. 9-11) wherein said antenna system is also for providing one of said first portion and said second portion of said beacon frame signal to said receiver (col. 14, lines 10-44).

Regarding claim 25, Ward et al as modified discloses an apparatus (figs. 9-11) wherein said beacon frame signal is a transmission of a beacon frame by an access point (col. 9, lines 16-54).

Regarding claim 26, Ward et al as modified discloses an apparatus (figs. 9-11) wherein said beacon frame comprises a field for enhancing signal quality estimation (col. 9, lines 2-34;col. 10, lines 20-47).

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Roy discloses an array antenna system comprising an array of antenna elements and a receiver, which uses a subset of the signals from the antenna elements; the selection of the subset of signals, which should be used for a particular user, is made on the basis of measurements of potential performance.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marceau Milord whose telephone number is 571-272-7853. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on 571-272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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